

**WHAT IS CLAIMED IS:**

1           1. A mobile terminal which transmits, over an air interface to a power status  
2 repository of a wireless local area network (LAN), power status information, the power  
3 status information having an indication of whether the mobile terminal is currently  
4 operating using battery power or line power.

1           2. The mobile terminal of claim 1, wherein the power status information is  
2 transmitted at one of the following times: (1) upon power-up of the mobile terminal;  
3 (2) upon command issued from the power status repository; (3) upon establishment of a  
4 connection between the mobile terminal and the LAN; and (4) upon a change in power  
5 status for the mobile terminal.

1           3. The mobile terminal of claim 1, wherein the power status information is  
2 transmitted as a dedicated message.

1           4. The mobile terminal of claim 1, wherein the power status information is  
2 included in a message with other status information.

1           5. The mobile terminal of claim 1, wherein the power status repository is an  
2 access point of the wireless local area network.

1           6. The mobile terminal of claim 1, wherein the wireless local area network is an  
2 ad hoc network and wherein the power status repository is another mobile terminal  
3 participating in the network.

1           7. A wireless local area network (LAN) comprising a mobile terminal which  
2 communicates over an air interface with a power status repository; wherein  
3 the mobile terminal transmits power status information over the air interface to  
4 the power status repository, the power status information having an indication of  
5 whether the mobile terminal is currently operating using battery power or line power;  
6 the power status repository uses the power status information to determine when  
7 to transmit a frequency measurement command to the mobile terminal to request the  
8 mobile terminal to make measurements regarding a radio frequency.

1 8. The network of claim 7, wherein the power status repository transmits a  
2 frequency measurement command more often to the mobile terminal when the mobile  
3 terminal (MT) is using line power than when the mobile terminal is using battery  
4 power.

1 9. The network of claim 7, wherein the power status information is transmitted  
2 at one of the following times: (1) upon power-up of the mobile terminal; (2) upon  
3 command issued from the power status repository; (3) upon establishment of a  
4 connection between the mobile terminal and the LAN; and (4) upon a change in power  
5 status for the mobile terminal.

1 10. The network of claim 7, wherein the power status information is transmitted  
2 as a dedicated message.

1 11. The network of claim 7, wherein the power status information is included in  
2 a message with other status information.

1 12. The network of claim 7, wherein the power status repository is an access  
2 point of the wireless local area network.

1 13. The network of claim 7, wherein the wireless local area network is an ad  
2 hoc network and wherein the power status repository is another mobile terminal  
3 participating in the network.

1 14. A method of operating a wireless local area network (LAN) comprising a  
2 mobile terminal which communicates over an air interface with a power status  
3 repository; the method comprising:

4 the mobile terminal transmitting power status information over the air interface  
5 to the power status repository, the power status information having an indication of  
6 whether the mobile terminal is currently operating using battery power or line power;

7 the power status repository using the power status information to determine  
8 when to transmit a frequency measurement command to the mobile terminal to request  
9 the mobile terminal to make measurements regarding a radio frequency.

1           15. The method of claim 14, further comprising the power status repository  
2 transmitting a frequency measurement command more often to the mobile terminal  
3 when the mobile terminal is using line power than when the mobile terminal is using  
4 battery power.

1           16. The method of claim 14, further comprising transmitting the power status  
2 information at one of the following times: (1) upon power-up of the mobile terminal;  
3 (2) upon command issued from the power status repository; (3) upon establishment of a  
4 connection between the mobile terminal and the LAN; and (4) upon a change in power  
5 status for the mobile terminal.

1           17. The method of claim 14, further comprising transmitting the power status  
2 information as a dedicated message.

1           18. The method of claim 14, further comprising transmitting the power status  
2 information in a message with other status information.

1           19. The method of claim 14, further comprising using an access point of the  
2 wireless local area network as the power status repository.

1           20. The method of claim 7, wherein the wireless local area network is an ad hoc  
2 network, and wherein the method further comprises using another mobile terminal  
3 participating in the network as the power status repository.

1           21. A mobile terminal which transmits, over an air interface to a power status  
2 repository of a wireless local area network (LAN), measurement capability information,  
3 the measurement capability information having an indication of whether the mobile  
4 terminal has a capacity to perform radio frequency measurements.

1           22. The mobile terminal of claim 21, wherein the measurement capability  
2 information indicates one of low power of the mobile terminal or a power restriction on  
3 the mobile terminal.

1           23. The mobile terminal of claim 21, wherein the measurement capability  
2 information indicates a sleep mode of the mobile terminal.

1           24. The mobile terminal of claim 21, wherein the measurement capability  
2 information is transmitted as a dedicated message.

1           25. The mobile terminal of claim 21, wherein the measurement capability  
2 information is included in a message with other status information.

1           26. The mobile terminal of claim 21, wherein the power status repository is an  
2 access point of the wireless local area network.

1           27. The mobile terminal of claim 21, wherein the wireless local area network is  
2 an ad hoc network and wherein the power status repository is another mobile terminal  
3 participating in the network.

1           28. A wireless local area network (LAN) comprising a mobile terminal which  
2 communicates over an air interface with a power status repository, wherein the mobile  
3 terminal transmits measurement capability information over the air interface to the  
4 power status repository, the measurement capability information having an indication of  
5 whether the mobile terminal has a power capacity to perform radio frequency  
6 measurements.

1           29. The network of claim 28, wherein if the power status repository does not  
2 have sufficient measurements regarding radio frequency, the power status repository  
3 modifies a rate at which a frequency measurement command is transmitted to another  
4 mobile terminal.

1           30. The network of claim 28, wherein the power status repository increases a  
2 rate at which a frequency measurement command is transmitted to another mobile  
3 terminal.

1           31. The network of claim 28, wherein the measurement capability information  
2 indicates one of low power of the mobile terminal or a power restriction on the mobile  
3 terminal.

1 32. The network of claim 28, wherein the measurement capability information  
2 indicates a sleep mode of the mobile terminal.

1 33. The network of claim 28, wherein the measurement capability information  
2 is transmitted as a dedicated message.

1 34. The network of claim 28, wherein the measurement capability information  
2 is included in a message with other status information.

1 35. The network of claim 28, wherein the power status repository is an access  
2 point of the wireless local area network.

1 36. The network of claim 28, wherein the wireless local area network is an ad  
2 hoc network and wherein the power status repository is another mobile terminal  
3 participating in the network.

1 37. A method of operating a wireless local area network (LAN) comprising a  
2 mobile terminal which communicates over an air interface with a power status  
3 repository; the method comprising:

4 the mobile terminal transmitting measurement capability information over the air  
5 interface to the power status repository, the measurement capability information having  
6 an indication of whether the mobile terminal has a power capacity to perform radio  
7 frequency measurements;

8 the power status repository using the measurement capability information to  
9 determine whether to transmit a frequency measurement command to the mobile  
10 terminal to request the mobile terminal to make measurements regarding a radio  
11 frequency.

1 38. The method of claim 37, wherein if the power status repository does not  
2 have sufficient measurements regarding radio frequency, the power status repository  
3 modifies a rate at which a frequency measurement command is transmitted to another  
4 mobile terminal.

1 39. The method of claim 38, wherein the power status repository increases a  
2 rate at which a frequency measurement command is transmitted to another mobile  
3 terminal.

1 40. The method of claim 37, further comprising transmitting the measurement  
2 capacity information as a dedicated message.

1 41. The method of claim 37, further comprising including in the measurement  
2 capability information an indication of one of low power of the mobile terminal and a  
3 power restriction on the mobile terminal.

1 42. The network of claim 37, further comprising including in the measurement  
2 capability information an indication of a sleep mode of the mobile terminal.

1 43. The method of claim 37, further comprising transmitting the measurement  
2 capacity information in a message with other status information.

1 44. The method of claim 37, further comprising using an access point of the  
2 wireless local area network as the power status repository.

1 45. The method of claim 37, wherein the wireless local area network is an ad  
2 hoc network, and wherein the method further comprises using another mobile terminal  
3 participating in the network as the power status repository.

1 46. A mobile terminal which transmits information over an air interface to  
2 power status repository of a wireless local area network (LAN), and wherein the mobile  
3 terminal determines a duration of a sleep cycle in accordance with power status  
4 information of the mobile terminal, the power status information having an indication of  
5 whether the mobile terminal is currently operating using battery power or line power.

1 47. The mobile terminal of claim 46, wherein the power status repository is an  
2 access point of the wireless local area network.

1           48. The mobile terminal of claim 46, wherein the wireless local area network is  
2 an ad hoc network and wherein the power status repository is another mobile terminal  
3 participating in the network.

1           49. A wireless local area network (LAN) comprising:  
2 a power status repository;  
3 plural mobile terminals which communicate over an air interface with the power  
4 status repository;  
5 wherein if the power status repository does not have sufficient measurements  
6 from the plural mobile terminals in view of incapacity of one or more of the plural  
7 mobile terminals to perform a frequency measurement regarding radio frequency, the  
8 power status repository modifies a rate at which a frequency measurement command is  
9 transmitted to any of the mobile terminals which have sufficient capacity to perform the  
10 frequency measurement.

1           50. The network of claim 49, wherein the power status repository increases a  
2 rate at which a frequency measurement command is transmitted to the mobile terminals  
3 which have sufficient capacity to perform the frequency measurement.

1           51. The network of claim 49, wherein the power status repository is an access  
2 point of the wireless local area network.

1           52. The network of claim 49, wherein the wireless local area network is an ad  
2 hoc network and wherein the power status repository is another mobile terminal  
3 participating in the network.

1           53. A method of operating a wireless local area network (LAN) having plural  
2 mobile terminals which communicate over an air interface with a power status  
3 repository, the method comprising:  
4 making a determination whether the power status repository has sufficient  
5 measurements from the plural mobile terminals in view of incapacity of one or more of  
6 the plural mobile terminals to perform a frequency measurement regarding radio  
7 frequency; and if the determination is negative;

8        modifying a rate at which a frequency measurement command is transmitted  
9        from the power status repository to any of the mobile terminals which have sufficient  
10       capacity to perform the frequency measurement.

1        54. The method of claim 53, further comprising the power status repository  
2        increasing a rate at which a frequency measurement command is transmitted to the  
3        mobile terminals which have sufficient capacity to perform the frequency measurement  
4        if the determination is negative.

1        55. The method of claim 53, further comprising using an access point of the  
2        wireless local area network as the power status repository.

1        56. The method of claim 53, wherein the wireless local area network is an ad  
2        hoc network, and wherein the method further comprises using another mobile terminal  
3        participating in the network as the power status repository.

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